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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/898,514	07/03/2001	James A. Proctor JR.	2479.2038-001	4006

21005 7590 02/12/2004

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EXAMINER	
SHAH, CHIRAG G	
ART UNIT	**PAPER NUMBER**
2664	7

DATE MAILED: 02/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

8

Office Action Summary	Application No.	Applicant(s)	
	09/898,514	PROCTOR ET AL.	
	Examiner	Art Unit	
	Chirag G Shah	2664	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 03 July 2001.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-36 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) 1-36 is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a)☐ All b)☐ Some * c)☐ None of:
1.☐ Certified copies of the priority documents have been received.
2.☐ Certified copies of the priority documents have been received in Application No. _____.
3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 5.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-36 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim1-36 of copending Application No. 10/196,569. This is a provisional double patenting rejection since the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-35 rejected under 35 U.S.C. 103(a) as being unpatentable over Roh et al (US Patent No. 6,249,517) in view of Zehavi (5,414,728).

Referring to claim 1, Roh et al discloses in the abstract and in claims 1 and 4 and respective portions of the specification of a system which supports code division multiple access

communication among members of a first group of terminals (a first data path transmitting traffic data users) and among a second group of terminals (a second data path transmitting traffic data users), a method comprising the steps of: assigning to the first group of terminals a first code, each user of the first group being unique identifiable by a unique code offset (as disclosed in abstract, claims 1 and 4, one spreading method uses the long code with different time offset for each channel as the channel-separating and /or PN spreading code); assigning to the second group of terminals the same code as used by the first group but each user of the second group using a common offset of that code (as disclosed in abstracts and claims 1 and 4, another spreading code method uses an orthogonal code and the long PN code with a fixed or common time offset as the channel-separating and the PN spreading code, respectively). Roh et al further discloses in column 4, lines 44-54 and in claim 4 that the channels, which pass through both the orthogonal spreader and the long code spreader, are channel separated by the orthogonal codes different form one other and spread again by long codes having a fixed (common) time offset, thus indicating that each user of the second group gets assigned an additional unique code for each of the terminals in the second group as claim. Roh et al discloses of unique code offset (Group 1) and common code offset (Group 2), however fails to disclose that the code offset is code phase offset. Zehavi discloses in figure 3, column 6, lines 44-67, that in the case where the I and Q channels are assigned to different users, the long PN scrambling code are preferably different e.g. either different code sequences are used or the same code sequences but of different code phase offsets (a delayed or advanced code sequence). Therefore, it would have been obvious to modify the teachings of Roh et al to include the teachings of different code phase offset with respect to where the I and Q channels are assigned to different users of different

groups in order to increase data rate traffic channels for data transmission rate at higher than the nominal system rate.

Referring to claim 24, Roh et al discloses in abstract and in claims 1 and 4 of a wireless communication system comprising a first set of access units (a first data path transmitting traffic data users) and a second set of access units (a second data path transmitting traffic data users), the first set of access units and the second set of access units capable of communicating with a central base station wherein the first set of access units use a chip rate scrambling code to separate their user channels, each individual unit of the first set of access units having at least one unique, non-orthogonal scrambling sequence that is selected from a unique code offset of a longer pseudorandom noise sequence (as disclosed in abstract, claims 1 and 4, one spreading method uses the long code with different time offset for each channel as the channel-separating and /or PN spreading code), and wherein the second group of access units share a common chip rate scrambling code that is not used by the first group of access units (as disclosed in abstracts and claims 1 and 4, another spreading code method uses an orthogonal code and the long PN code with a fixed or common time offset as the channel-separating and the PN spreading code, respectively). Roh et al discloses of unique code offset (Group 1) and common code offset (Group 2), however fails to disclose that the code offset is code phase offset. Zehavi discloses in figure 3, column 6, lines 44-67, that in the case where the I and Q channels are assigned to different users, the long PN scrambling code are preferably different e.g. either different code sequences are used or the same code sequences but of different code phase offsets (a delayed or advanced code sequence). Therefore, it would have been obvious to modify the teachings of Roh et al to include the teachings of different code phase offset with respect to where the I and Q

channels are assigned to different users of different groups in order to increase data rate traffic channels for data transmission rate at higher than the nominal system rate.

Referring to claim 2, Roh et al. discloses in figure 2 and respective portion of the specification a method as in claim 1 wherein the code assigned to the first group of terminals is a common chipping rate code as claim.

Referring to claim 3 and 25, Roh et al discloses in column 4, lines 44-54 and in claim 4 that the channels, which pass through both the orthogonal spreader and the long code spreader, are channel separated by the orthogonal codes different form one other and spread again by long codes having a fixed (common) time offset, thus indicating a method as in claim 1 wherein the additional codes assigned to the second group of terminals are a set of unique, orthogonal codes as claims.

Referring to claim 4, Roh et al discloses in column 4, lines 23-33 that the traffic data is spread by the long codes having different time offsets allocated to each channel without the orthogonal spreading through the orthogonal spreader 25, thus disclosing a method as in claim 1 wherein the code assigned to the first group of terminals is a unique, non-orthogonal scrambling sequence as claim.

Referring to claim 5, Roh et al discloses in claims 1 and 4 that a method as in claim 1 wherein the first group of terminals uses scrambling codes that are unique phase shifts (different code offset) of a larger pseudorandom noise sequence (PN code) as claim.

Referring to claim 6, Roh et al discloses in column 4, lines 44-54 and in claim 4 that the channels, which pass through both the orthogonal spreader and the long code spreader, are channel separated by the orthogonal codes different form one other and spread again by long

codes having a fixed (common) time offset, thus indicating a method as in claim 1 wherein the second group of terminals use additional codes that are a set of unique orthogonal codes as claim.

Referring to claims 7 and 26, Roh et al discloses in column 5, lines 61 to column 6,lines 10 along with column 4, lines 44-54 support a method as in claim 6 wherein the unique orthogonal code is used (via orthogonal spreader 52) to scramble the transmissions of the second group of terminals at an indicated chip rate 'n' bps as claim.

Referring to claims 8 and 27, Roh et al discloses in column 6,lines 42-46 that the time offset of the long codes is fixed to the cell/sector-specific time offset and the channel-separation is achieved by the orthogonal code, thus supporting a method as in claim 7 wherein the transmission timing for the second group of terminals, which uses the orthogonal spreader 52 is synchronized to allow transmissions from the second group of terminals to be orthogonal to one another as claim.

Referring to claims 9 and 29, Roh et al discloses BPSK data modulation and QPSK PN spreading, the connection between the orthogonal spreader and the long code spreader is shown in figure 5 supporting a method as in claim 1 wherein the two groups of terminals employ radio frequency modulation that is different from each other as claims.

Referring to claim 10 and 30, Roh et al discloses in figure 2 and respective portions of the specification of one group employing orthogonal spreader and the other group bypassing the orthogonal spreader thus supporting a method as in claim 1 wherein the two groups of terminals employ the codes in different spreading techniques as claims.

Referring to claim 11, 31, 32 and 34, Roh et al discloses in figure 2 and column 3, lines 55 to column 4,lines 22 that if the product of the digital bit rate and the length of the orthogonal code is not equal to the chip rate, the switch controller 29 controls the first and the second switches 24 and 26 so that the switch controller 29 spreads the traffic data through an I channel and a Q channel in the long PN spreader 27 and 27 supporting a method as in claim 10 wherein the first group of terminals (identifiable by a unique code phase offset) uses pairs of the codes as respective inputs to an in-phase and quadrature modulator as claims.

Referring to claim 12, Roh et al disclose in column 4, lines 34-57 of a method as in claim 10 wherein the second group of terminals (with common offset) use the assigned additional codes as short scrambling codes such as Gold codes and Kasami codes as claim.

Referring to claim 13, Roh et al discloses in figure 2 and column 4,lines 13-57 that the index of the Walsh function and the fixed code offset of the long PN codes are also notified to the mobile station by the base station together with the mode to be used, thus a method as in claim 1 wherein a first group of terminals receives periodic timing adjustment information over a first link direction to provide for timing adjustment for a second link direction as claim.

Referring to claim 14, Roh et al discloses in claims 1 and 4 that the second group of terminals use a common offset of that code, thus do not need periodic timing adjustment information since the offset are common as claim

Referring to claim 15, Roh et al discloses in column 4, lines 34-57 a method as in claim 1 wherein the second group of terminals (with common offset) may use an additional code which is a short length orthogonal code such as Gold codes and Kasami codes as claim.

Referring to claim 16, Roh et al discloses in column 4, lines 34-57 a method as in claim 1 wherein the second group of terminals (with common offset) use an additional code which is a short length such as Gold codes and Kasami codes, bit augmented pseudorandom noise sequence as claim.

Referring to claim 17, Roh et al discloses in figure 2 and column 3,lines 55 to column 4, lines 12 of a method as in claim 1 wherein the codes assigned to the first group of terminals (with unique offset) and the additional codes assigned to the second group of terminals (via orthogonal spreader) are used to encode via convolutional coder 21 transmissions on a reverse communication link between remotely located wireless terminals and a centrally located wireless base station as claim.

Referring to claim 18 and 21, Roh et al discloses in column 2, lines 1-20 that a method as in claim 1 wherein the groups of terminals use cellular and personal communication service cellular telephone (PCS) mobile receiver terminals as claim.

Referring to claim 19, Roh et al discloses in column 2, lines 1-20 that a method as in claim 18 wherein the a group of terminals are assigned codes according to a CDMA cellular telephone standard (PCS) specification as claim.

Referring to claim 20, Roh et al discloses in column 2, lines 1-20 that a method as in claim 19 wherein the CDMA cellular telephone standard specification is selected from the group consists of IS-95 as claim.

Referring to claim 22, Roh et al discloses in figure 2, a method as in claim 21 wherein the additional codes assigned to the second group of terminals are a set of common chip rate scrambling codes as claim.

Referring to claims 23, 33 and 35, Roh et al discloses in column 2, lines 1-11, a method as in claim 22 wherein the additional codes are scrambling codes that repeat every N chips pair, where N is an even number in a range to 32768 (2^15) chips as claims.

Referring to claim 28, Roh et al discloses in column 2, lines 1-11 of generating PN sequences. Roh et al fails to disclose that the wireless communication system of claim 24 wherein the scrambling code is 2^42 chips in length. Zehavi et al discloses in figure 3 and respective portions of the specification that PN generator 184 typically provides code sequences in length on the order of (2^42)-1chips, although codes of other lengths may be employed. Therefore, it would have been obvious to one of ordinary skill in the art to employ code sequences in the length on the order of 2^42 chips as taught by Zehavi into Roh's invention in order to explicitly specify design choice number of sequences that may be applied for a particular application.

5. Claim 36 rejected under 35 U.S.C. 103(a) as being unpatentable over Roh et al in view of Zehavi et al as applied to claim1-35 above, and further in view of Hiramatu (U.S. Patent No. 6,266,363).

Roh et al in view of Zehavi et al teaches of supporting a variety of transmission rates in a CDMA system using different code phase offset. Roh et al in view of Zehavi et al fails to disclose that the access units are using the assigned codes to format signals for a reverse link communication signal. Hiramatu teaches of performing mutual transmission (via transmitting/receiving apparatus) using a plurality of spreading codes. Hiramatu discloses in the third process in column 11, lines 49 to column 12, lines 29 that supports using the assigned spreading codes that formats signals for a reverse link communications signal. Therefore, it

would have been obvious to one of ordinary skill in the art to modify the teachings of Roh et al in view of Zehavi et al to incorporate the teachings of Hiramatu in order to exceed the prescribed quality.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Or faxed to:

(703) 305-3988, (for formal communications intended for entry)

Or:

(703) 305-3988 (for informal or draft communications, please label "Proposed" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2021 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G Shah whose telephone number is 703-305-5639. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cgs
January 30, 2004

Ajit Patel
Primary Examiner